

Readying Michigan to Make Good Energy Decisions

Michigan Energy Forum
Kalamazoo, MI
March 18, 2013

Eugene M. Trisko
Attorney at Law
On behalf of
American Coalition for Clean Coal Electricity
www.americaspower.org

About ACCCE

- Association of major coal producers, Class 1 railroads, and electric utilities, including all three principal Michigan electric utilities.
- ACCCE's mission is to promote clean coal technologies and the continued use of coal to provide reliable and affordable electric power from the nation's largest fossil energy resource.

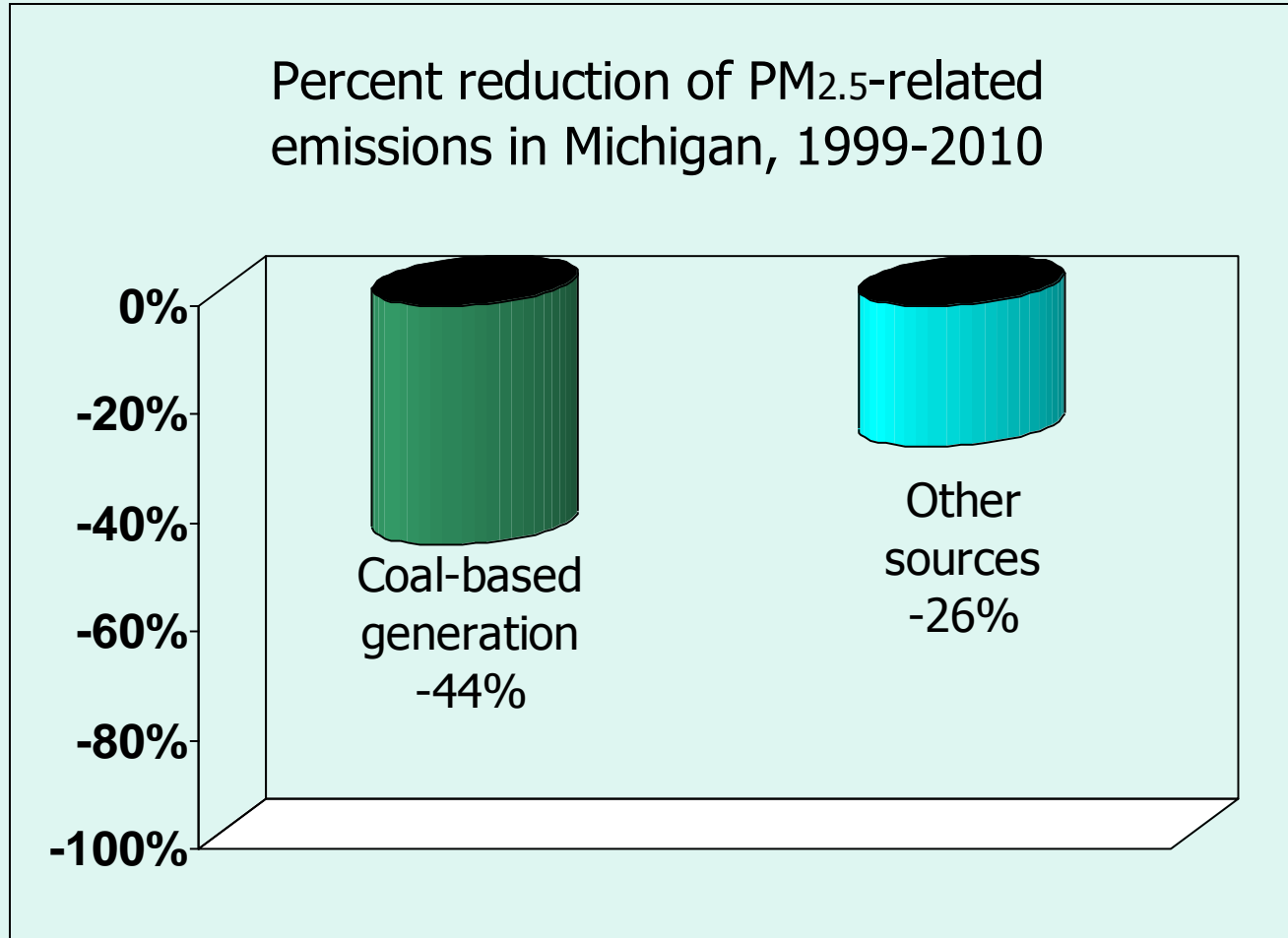
Today's topics

- Michigan coal-based utilities have achieved significant reductions of air pollutants.
- Michigan air quality is improving as a result of clean coal technology investments by Michigan utilities.
- Electric power produced by existing coal plants is among the least-cost sources of power in Michigan.

Topics, continued

- Coal-based electric generation provides more well-paying jobs than most other forms of electric power.
- Energy affordability is an issue for millions of Michigan's lower-income households.
- Coal should remain a mainstay of Michigan's electric supply portfolio in an “all of the above” energy strategy that emphasizes reliable sources of domestic energy.

Emission reductions in brief: PM_{2.5}-related emissions, 1999-2010



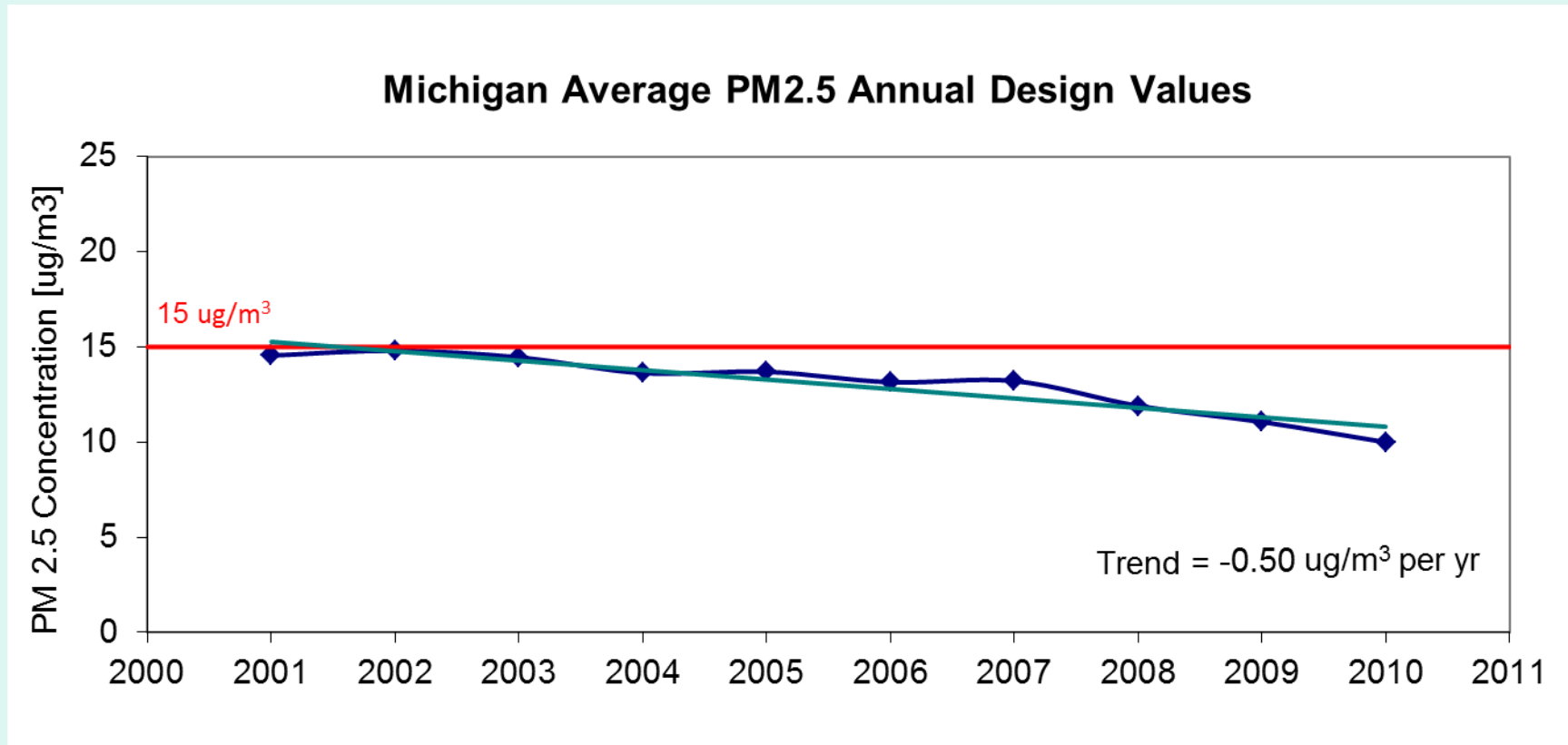
Source: Alpine Geophysics/Environ, Air Quality and Emission Trends Report, Michigan (2012). Data include emissions of SO₂, NO_x, VOCs and direct PM_{2.5}.

Emission reductions in brief: Ozone, 1999-2010

- Michigan's coal-fueled power plants have reduced emissions of NO_x by 58% since 1999.
- Coal-based electric generation accounted for 14% of Michigan's total NO_x emissions in 2010, compared with 62% for on-road and off-road motor vehicles and 23% for industrial processes and fuel use.

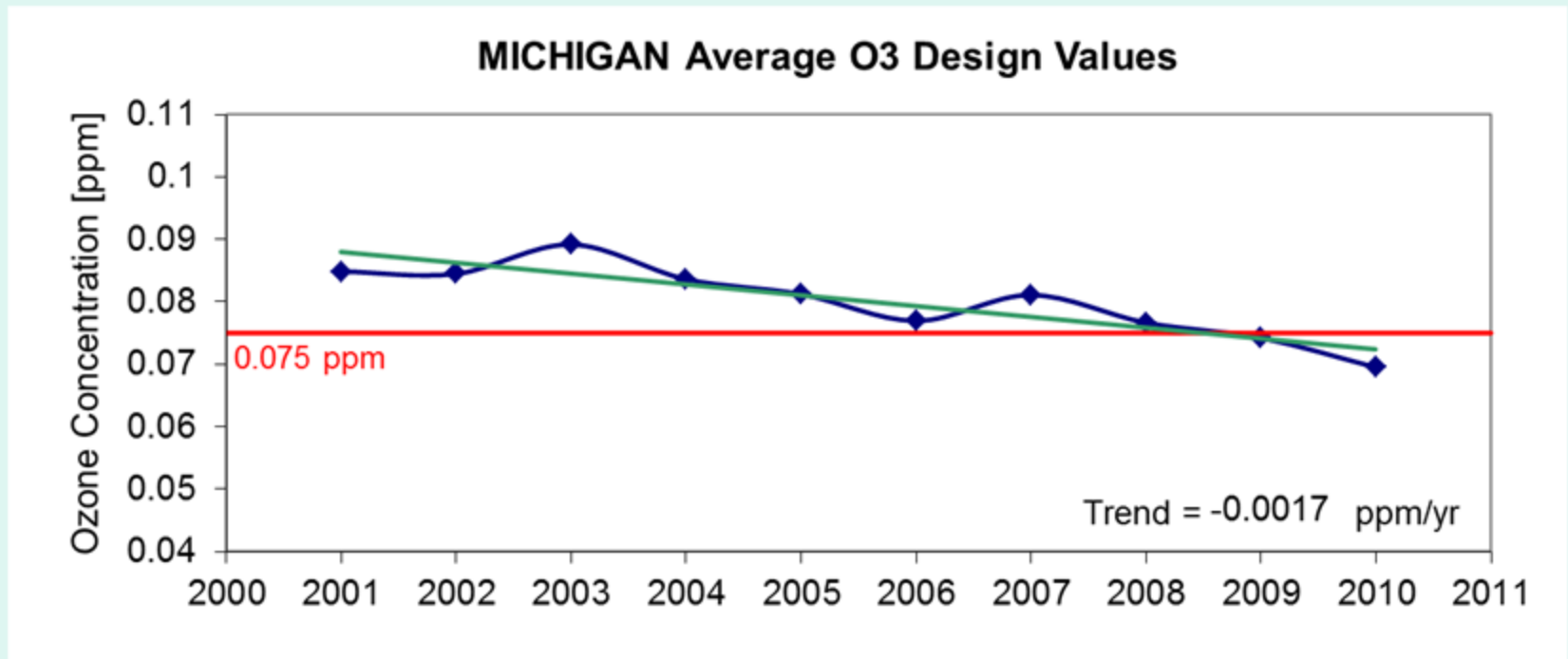
Source: Alpine Geophysics/Environ, Air Quality and Emission Trends Report, Michigan (2012).

Air quality is improving: PM2.5 trends



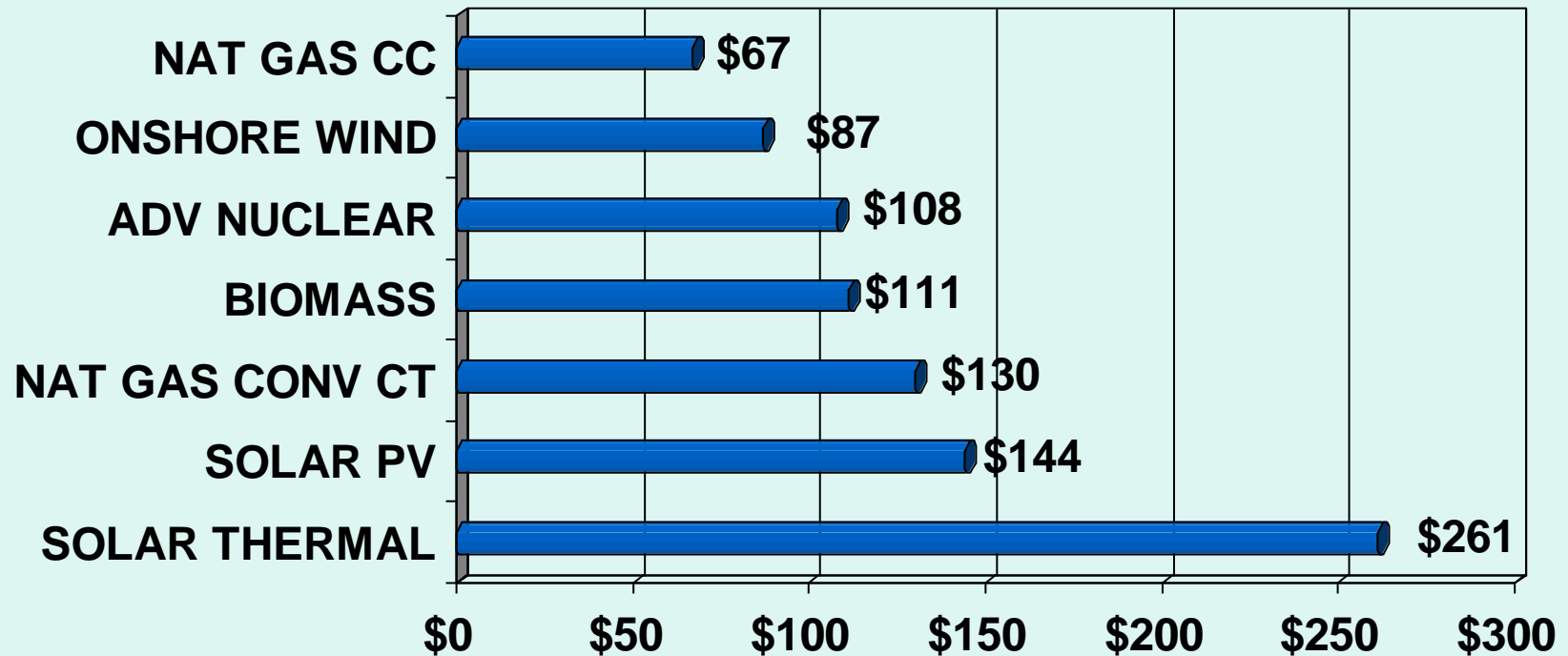
Source: Alpine Geophysics/Environ, Air Quality and Emission Trends Report, Michigan (2012).

Air quality is improving: ozone trends



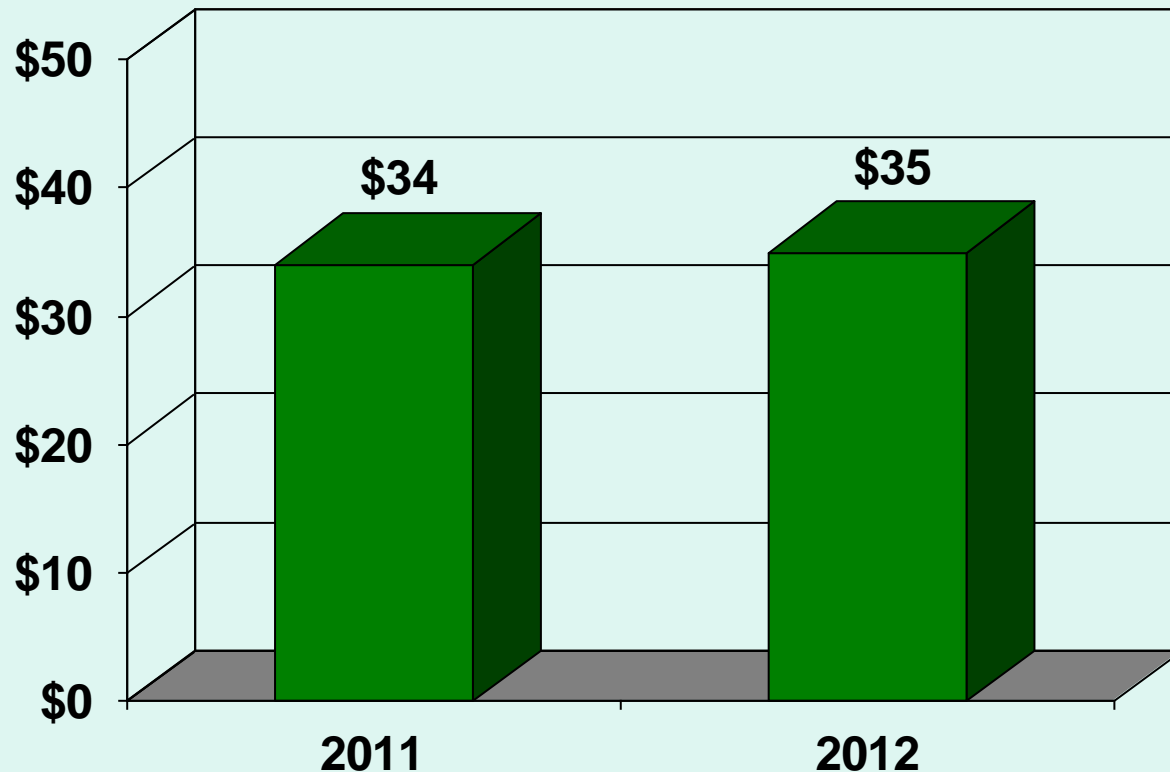
Source: Alpine Geophysics/Environ, Air Quality and Emission Trends Report, Michigan (2012).

EIA estimates of the cost of electricity from new sources (Levelized cost 2011 \$/MWh)



Source: DOE/EIA, "Levelized Cost of New Generation Resources in the Annual Energy Outlook 2013 (January 2013).

Cost of coal-based electric generation in Michigan (Current \$ per MWh)

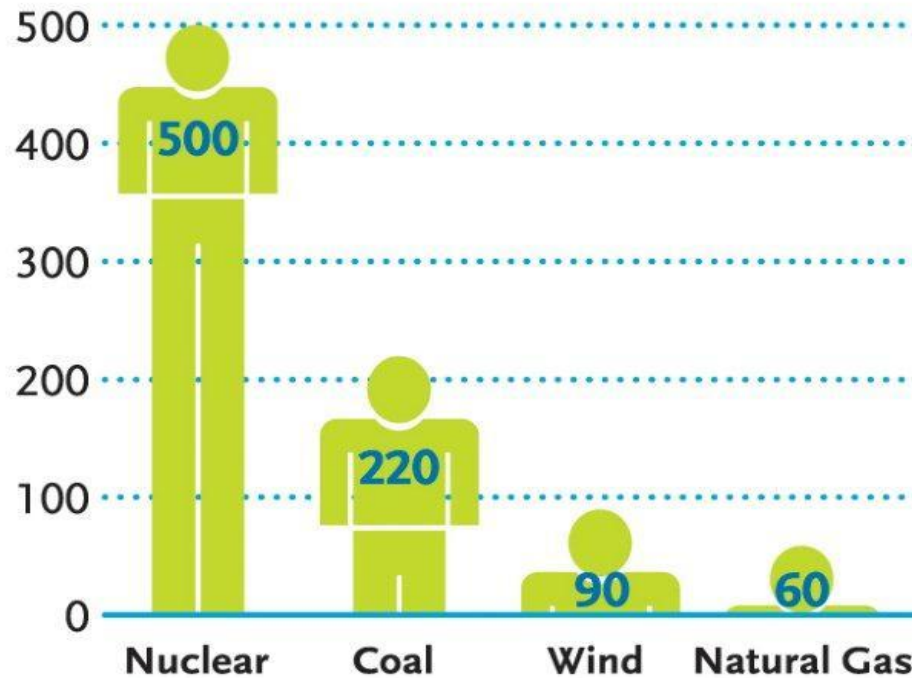


Source: FERC Form 1 (includes fixed and variable O&M.)

Coal generation is job-intensive: Operating phase

Jobs Created for Operating Energy Plants

Jobs per 1,000-megawatts of capacity



Sources: Ventyx and U.S. Department of Energy

Coal creates substantially more direct construction jobs than wind or natural gas

Man-Years per Gigawatt of New Generation Capacity, Development plus Construction Phases

Technology	Salaried Workforce	Hourly Workforce	Total Man-Years
Nuclear	4,785	9,575	14,360
Supercritical PC coal	1,390	4,980	6,370
IGCC gasified coal	2,130	5,150	7,280
Natural gas combined cycle	495	1,270	1,765
Onshore wind	305	1,180	1,485

Source: NCEP, Task Force Report on America's Future Energy Jobs (2009); data provided by Bechtel International.

A note on affordability

- 53% of Michigan households earn less than \$50,000 annually, with an average after-tax income of \$22,790.
- The 2.0 million Michigan households earning <\$50K will spend an estimated average of 21% of their after-tax income on gasoline and household utilities in 2013.
- Every marginal energy dollar counts to those who can least afford higher energy prices.

Source: ACCCE, Energy Cost Impacts on Michigan Families (February 2013.)

Reliability and price volatility

- Maintaining fuel diversity is essential to preserving reliability.
- Excessive reliance on fuels with historically high price volatility can risk stability of future electricity prices.
- Coal plants reduce the risk of fuel supply disruptions because they maintain months' of fuel supplies on-site.

All of the above

- State and federal “all of the above” energy policies should encourage, not deter, fuel diversity, including advanced coal options.
- Michigan is strategically located to source coal from all major U.S. producing regions.
- Preserving the low-cost generation provided by existing units equipped with clean coal technologies will help to maintain affordable energy prices.

Thank you!

- ACCCE appreciates the opportunity to participate in the Governor's energy planning process.
- We will supply additional materials for the record.
- We also thank our Michigan members for their support, and defer to their positions on issues that we have not addressed today.